

Alternative Measures for Consideration

Demand Side Management

Targeted Conservation

Residential End Use Control

Distributed Energy Resources

Distributed Generation (EnergyWeb Demo)

Dispatchable Resources (Tacoma EnergyWeb &
Demand Exchange – Olympic Peninsula)

R&D

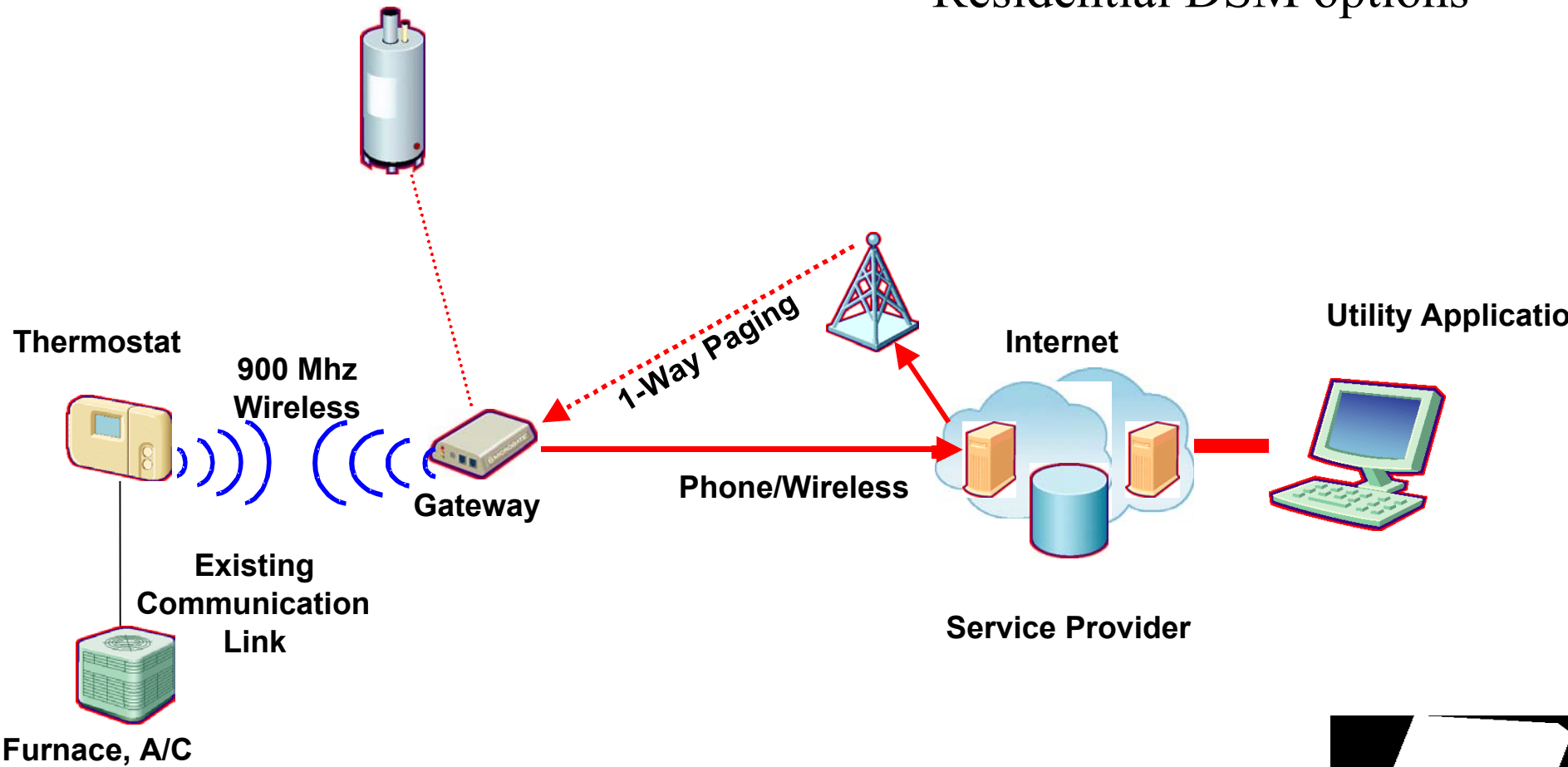
Energy Storage, Biomass, Small Renewable
monitoring

Energy Efficiency – Ready, off the shelf

- Invitation to Reduce Load through Conservation
- Limited Standard Offers
- CFL/TFL Rebates
- Vending Mi\$er
- LED traffic lights
- Water/Waste Water pumping
- Lighting Upgrades
- Demand responsive buildings (smart buildings)
- Fuel switching (space heat - hot water to Natural gas or propane)
- Lower system losses (new conductors or transformers, distribution level)

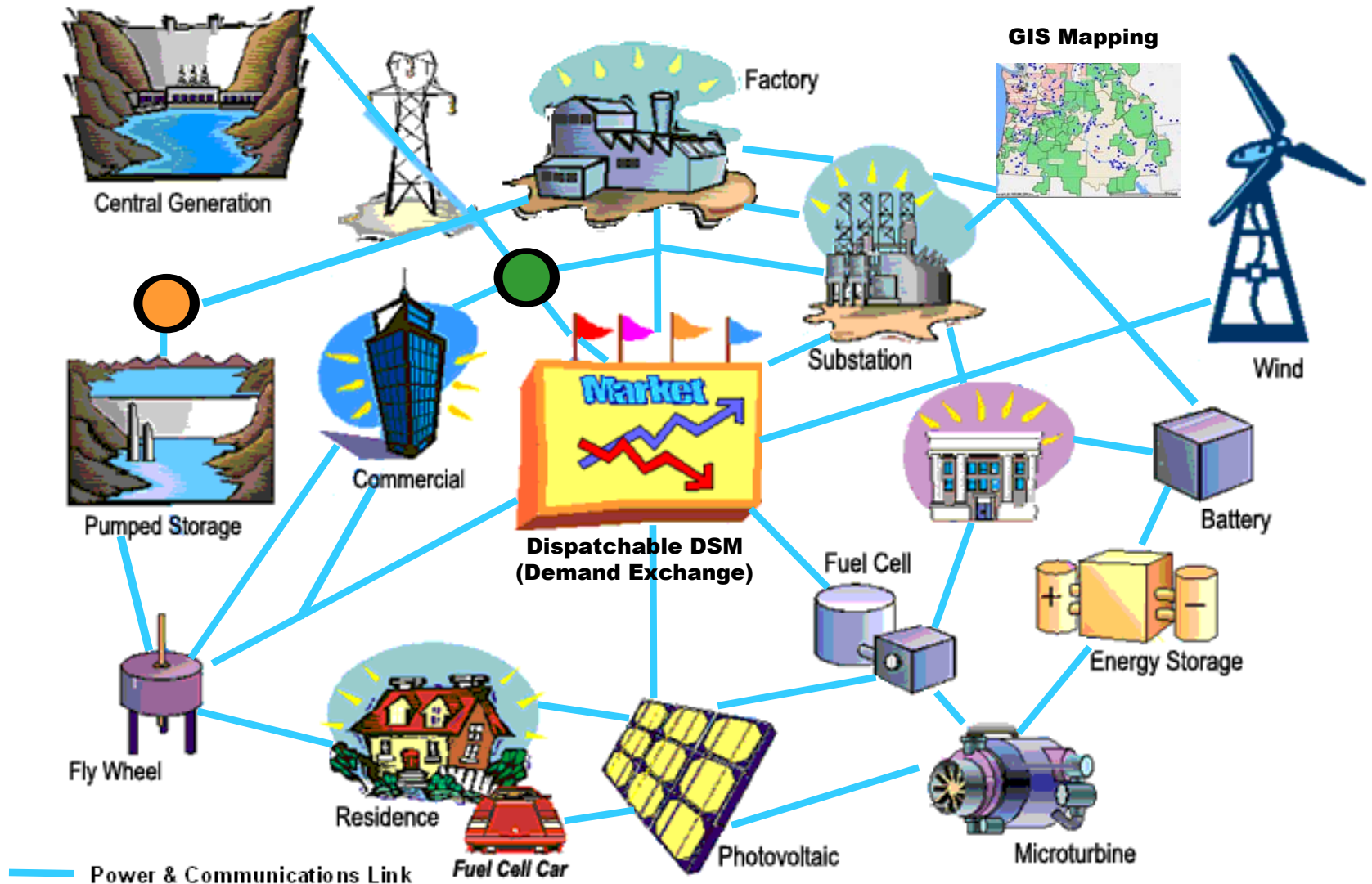
Ready to Demo

Residential DSM options



Ready to Demo

EnergyWeb



What is the Demand Exchange?

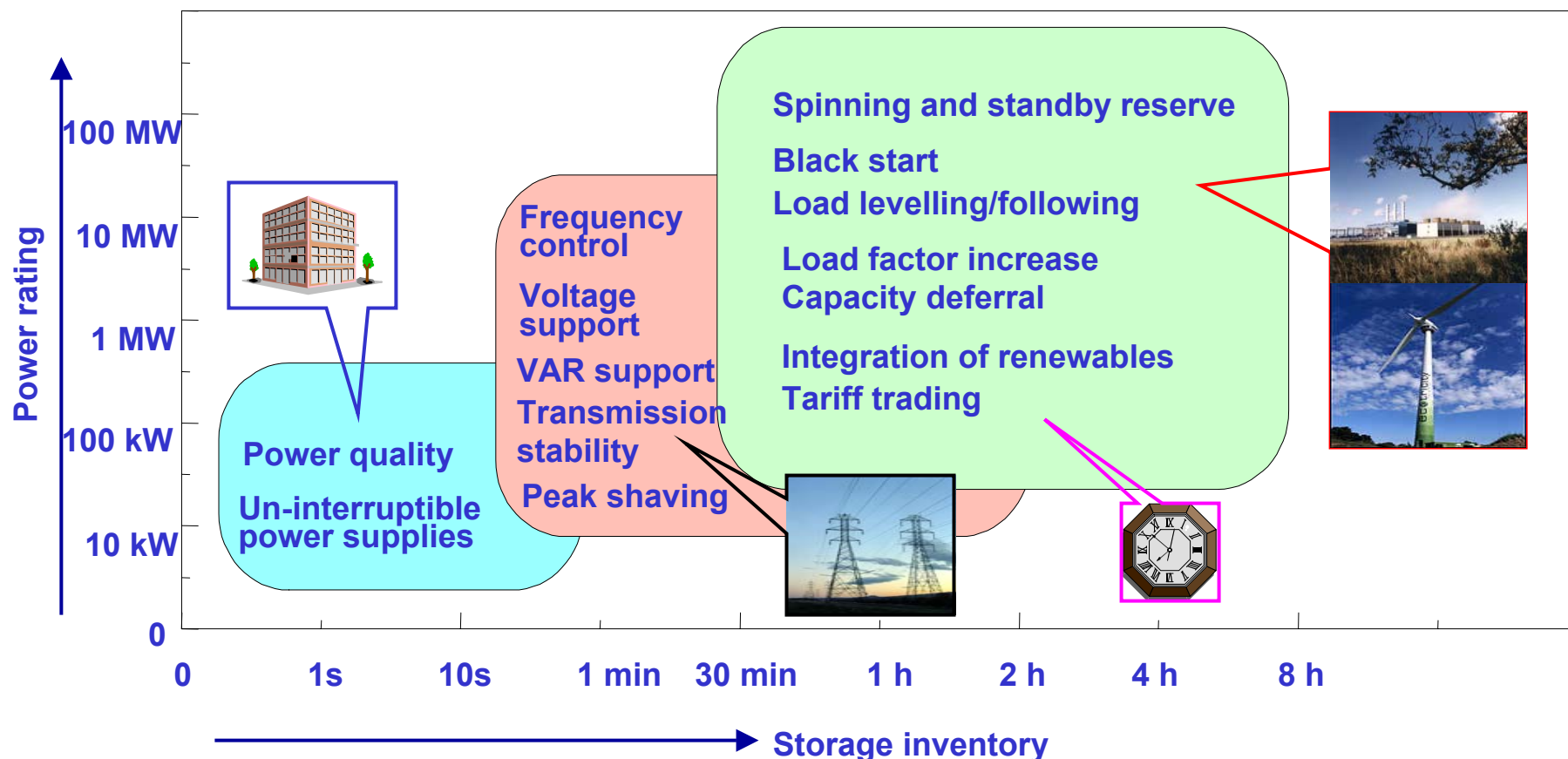
- **A peak load reduction program designed in response to dramatic swings in the market price of power in 1999 combined with a region-wide drought.**
- **A mechanism through which customers can curtail loads in times of short supply/high demand in exchange for payment**
- **An Internet-based auction**



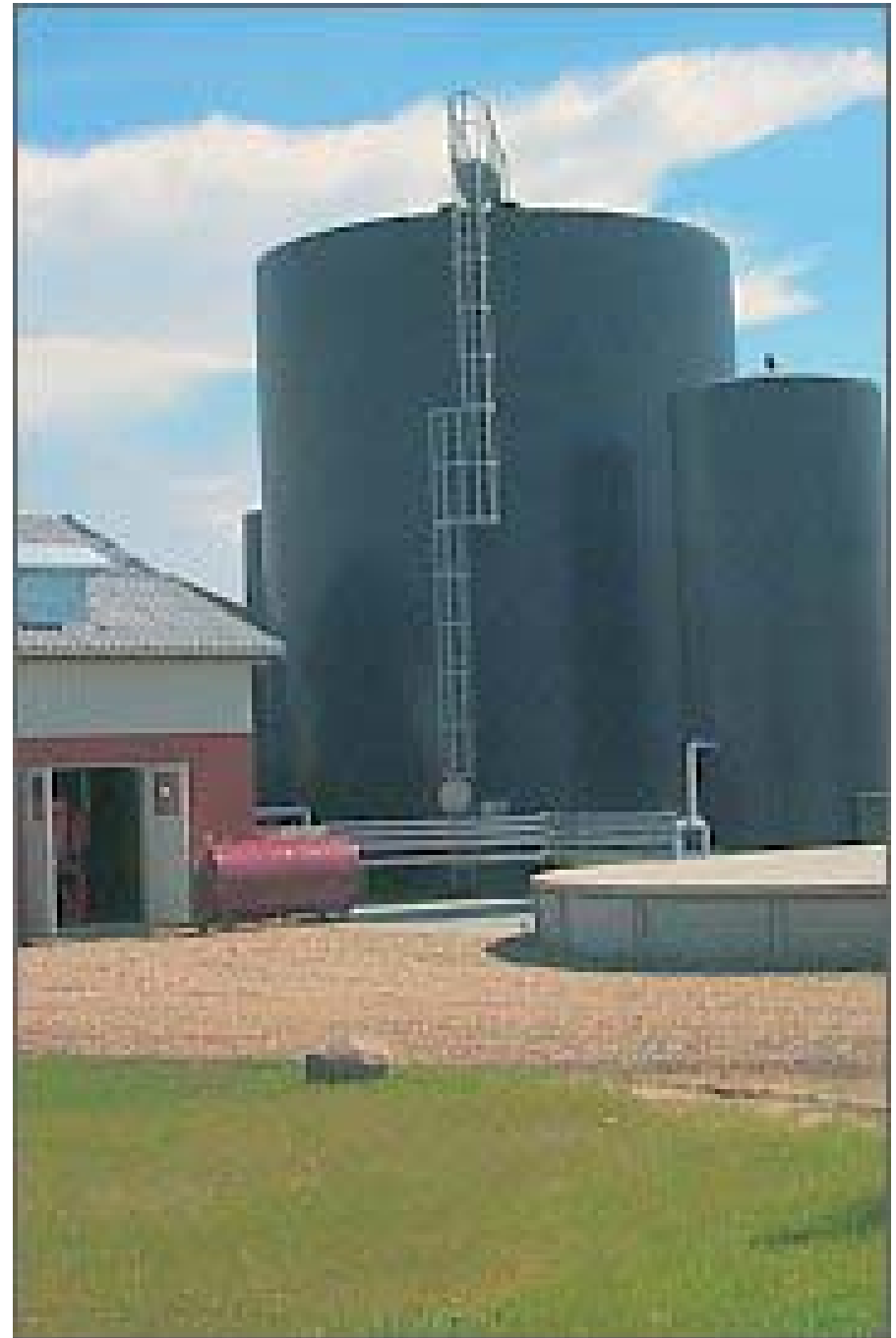
NaS demo would allow this range of options to be tested

Power quality and reliability applications

Energy management applications



Test peaking capability
of biomass renewables via
gas storage



Monitor in place renewables against peak use



PNW Energy Web Initiative

Regional Support

For

TBL Construction & RTO/SMD

Priority Demos and Analyses

- Islanded & synchronized DER operation
- Communications and control aspects of DER integration
- Communications and controls related to the aggregator role
- Isolated feeder DER operation (similar to micro-grid concept)
- Optimal dispatch schemes for building load management
- Value of DER as operating reserve (RTO/SMD)
- Value of DER for peak and emergency energy (RTO/SMD)
- Value of DER for distribution system deferral
- Value of DER for volt/VAR/losses
- Analyses related to price responsive demand (RTO/SMD)
- Renewables firming

Participant (Resources & In-kind)

TBL	Alstom Esca
Clark PUD	Sixth Dimension
Tacoma Power	Climate Trust
Milton-Freewater	PBL
PGE	Endorser (nice letter)
BEF	Washington DTED
Celerity Energy	NW En Tech Collab
Energy NW	PNGC
NW Natural	Snohomish PUD
Envenergy	Puget (may turn into part)